CLAIMS

1. A pressurized container comprising:

a hollow vessel defining a chamber therein;

a housing connected to the vessel, the housing defining an outlet;

a closure member connected to the housing and fluidly separating the outlet from the chamber of the vessel;

a moveable member seated within and forming a seal with the housing and abutting the closure member; and

an initiator connected to the housing, the initiator comprising a pyrotechnic charge housed within a body;

wherein activation of the initiator ignites the charge, thereby producing expanding gases that burst the body and propel the moveable member through the closure member, thereby fluidly connecting the chamber and the outlet.

2. The pressurized container of claim 1, wherein the moveable member is a projectile, and wherein the moveable member breaks through the closure member before breaking the seal with the housing.

3. The pressurized container of claim 1, wherein the moveable member comprises a radial wall and a circumferential wall extending from a periphery of the radial wall, wherein the circumferential wall and the radial wall define a cavity.

4. The pressurized container of claim 3, wherein a portion of the initiator is seated within the cavity.

5. The pressurized container of claim 3, wherein the radial wall abuts the closure member.

6. The pressurized container of claim 1, wherein the closure member comprises a first side and a second side, and wherein the moveable member abuts the first side of the closure member and the second side of the closure member faces the chamber.

7. The pressurized container of claim 1, wherein a portion of the housing and the closure member are a single unitary member.

8. The pressurized container of claim 7, wherein the housing and the vessel are joined by an inertia or friction weld.

9. The pressurized container of claim 1, wherein the vessel, the closure member, and a portion of the housing are a single unitary member.

10. The pressurized container of claim 1, wherein the vessel comprises aluminum formed by an impact process.

11. The pressurized container of claim 1, wherein the housing comprises aluminum formed by forging.

12. A pressurized container comprising:

a vessel defining a chamber therein;

a housing connected to the vessel, the housing defining an outlet;

a closure member connected to the housing and fluidly separating the outlet from the chamber of the vessel along a fluid outlet path;

a first initiator connected to the housing;

an obstruction partially blocking the outlet path; and

a second initiator connected to the housing;

wherein activation of the first initiator breaks the closure member, thereby fluidly connecting the chamber and the outlet along the outlet path; and

wherein activation of the second initiator breaks the obstruction, thereby further opening the outlet path.

13. The pressurized container of claim 12, further including a projectile seated within the housing and abutting the closure member, wherein activation of the first initiator propels the projectile through the closure member and out of the housing, thereby fluidly connecting the chamber and the outlet.

14. The pressurized container of claim 12, wherein a portion of the housing and the closure member are a single unitary member and wherein the housing is inertia welded or friction welded to the vessel.

15. The pressurized container of claim 12, wherein the vessel and the closure member are a single unitary member, and wherein the closure member, the vessel, and the plug form a sealed barrier around the chamber.

16. The pressurized container of claim 15, wherein the vessel, the closure member, and the portion of the housing are a single unitary member.

17. The pressurized container of claim 12, wherein the vessel comprises aluminum formed by an impact process.

18. The pressurized container of claim 12, wherein the housing comprises aluminum formed by forging.

19. The pressurized container of claim 12, wherein the obstruction comprises a portion of the second initiator.

20. A pressurized container comprising:

a vessel defining a chamber therein;

a housing connected to the vessel, the housing defining an outlet;

a main path defined by the housing, the main path fluidly connected to the outlet;

a first secondary path defined by the housing, the first secondary path connecting the main path to the chamber;

a second secondary path defined by the housing, the second secondary path connecting the main path to the chamber;

a first closure member fluidly separating the outlet from the chamber of the vessel along the first secondary path;

a second closure member fluidly separating the outlet from the chamber of the vessel along the second secondary path;

a first initiator connected to the housing; and

a second initiator connected to the housing;

wherein activation of the first initiator breaks the first closure member, thereby fluidly connecting the chamber and the outlet along the first secondary path and the main path; and

wherein activation of the second initiator breaks the second closure member, thereby fluidly connecting the chamber and the outlet along the second secondary path and the main path.

21. The pressurized container of claim 20, wherein the housing defines an orifice along the second secondary path.

22. The pressurized container of claim 20, further including a first projectile seated within the housing and abutting the first closure member, wherein activation of the first initiator propels the first projectile through the first closure member and out of the

housing, thereby fluidly connecting the chamber and the outlet along the first secondary path and the main path.

23. The pressurized container of claim 22, further including a second projectile seated within the housing and abutting the second closure member, wherein activation of the second initiator propels the second projectile through the second closure member and out of the housing, thereby fluidly connecting the chamber and the outlet along the second secondary path and the main path.

24. The pressurized container of claim 20, wherein the closure member and a portion of the housing are a single unitary member.

25. The pressurized container of claim 20, wherein the vessel and the closure member are a single unitary member, and wherein the closure member, the vessel, and the plug form a sealed barrier around the chamber.

26. The pressurized container of claim 25, wherein the vessel, the closure member, and the portion of the housing are a single unitary member.

27. The pressurized container of claim 20, wherein the vessel and the housing are joined by an inertia weld or a friction weld.

28. The pressurized container of claim 20, wherein the vessel comprises aluminum formed by an impact process.

29. The pressurized container of claim 20, wherein the housing comprises aluminum formed by forging.

30. A pressurized container comprising:

a hollow vessel defining a chamber therein, and defining a fill hole therein;

a plug forming a closure of the fill hole;

a housing connected to the vessel, the housing defining an outlet;

a closure member fluidly separating the outlet from the chamber of the vessel, the closure member comprising a plate having a substantially constant thickness; and

an initiator connected to the housing, wherein activation of the initiator breaks the closure member, thereby fluidly connecting the chamber and the outlet;

wherein the vessel and the closure member are a single unitary member, and wherein the closure member, the vessel, and the plug form a sealed barrier around the chamber.

31. The pressurized container of claim 30, further including a projectile seated within the housing and abutting the closure member, wherein activation of the initiator propels the projectile through the closure member and out of the housing, thereby fluidly connecting the chamber and the outlet.

32. The pressurized container of claim 30, wherein a portion of the housing, the vessel, and the closure member are a single unitary member.

33. The pressurized container of claim 30, wherein the vessel and the housing are joined by an inertia weld or a friction weld.

34. The pressurized container of claim 30, wherein the unitary member comprises aluminum formed by an impact process.

35. The pressurized container of claim 30, wherein the housing comprises aluminum formed by forging.

36. A pressurized container comprising:

a hollow vessel defining a chamber therein;

a housing connected to the vessel, the housing defining an outlet;

a closure member connected to the housing and fluidly separating the outlet from the chamber of the vessel; and

a first initiator connected to the housing;

wherein activation of the first initiator breaks the closure member, thereby fluidly connecting the chamber and the outlet; and

wherein a portion of the housing and the closure member are a single unitary member and wherein the housing is inertia or friction welded to the vessel.

37. The pressurized container of claim 36, further including a projectile seated within the housing and abutting the closure member, wherein activation of the initiator propels the projectile through the closure member and out of the housing, thereby fluidly connecting the chamber and the outlet.

38. The pressurized container of claim 36, wherein the closure member, the vessel, and a plug forming a closure of a fill hole in the vessel form a sealed barrier around the chamber.

39. The pressurized container of claim 36, wherein the vessel comprises aluminum formed by an impact process.

40. The pressurized container of claim 36, wherein the housing comprises aluminum formed by forging.

41. A method of releasing a pressurized fluid from a container, the method comprising the steps of:

breaking a closure member that fluidly separates the pressurized fluid from an outlet of the container, thereby allowing the fluid to escape to the outlet along an outlet path; and

breaking an obstruction that is partially blocking the outlet path, thereby further opening the outlet path.

42. The method of claim 41, wherein the step of breaking a closure member comprises activating an initiator, thereby propelling a projectile through the closure member.

43. The method of claim 42, wherein before the projectile is propelled, the projectile abuts the closure member and is seated within a housing that defines the outlet.

44. The method of claim 41, wherein the obstruction comprises a portion of an initiator.

45. A pressurized container comprising:

a hollow vessel defining a chamber therein, the chamber comprising a first portion and a second portion;

an isolator member substantially fluidly separating the first portion and the second portion;

a passage fluidly connecting the first portion of the chamber and the second portion of the chamber;

a housing connected to the vessel, the housing defining an outlet;

a closure member connected to the housing and fluidly separating the outlet from the first portion of the chamber of the vessel; and

an initiator connected to the housing;

wherein activation of the initiator breaks the closure member, thereby fluidly connecting the first portion of the chamber and the outlet.

46. The pressurized container of claim 45, wherein the chamber is filled with a pressurized gas comprising a mixture of helium and carbon dioxide, and wherein after the closure member is broken, the pressurized gas within the first portion of the chamber escapes through the outlet and the pressurized gas within the second portion escapes through the passage, through the first portion of the chamber, and through the outlet.

47. The pressurized container of claim 45, wherein the chamber is filled with a pressurized gas comprising a mixture of helium and argon, and wherein after the closure member is broken, the pressurized gas within the first portion of the chamber escapes through the outlet and the pressurized gas within the second portion escapes through the passage, through the first portion of the chamber, and through the outlet.

48. The pressurized container of claim 45, wherein the isolator member is a plate, and wherein the passage is a hole defined by the plate.

49. The pressurized container of claim 45, further including a projectile seated within the housing and abutting the closure member, wherein activation of the initiator propels the projectile through the closure member and out of the housing, thereby fluidly connecting the first portion of the chamber and the outlet.

50. The pressurized container of claim 49, wherein the projectile breaks through the closure member before breaking the seal with the housing.

51. The pressurized container of claim 49, wherein the projectile comprises a radial wall and a circumferential wall extending from a periphery of the radial wall, and wherein the circumferential wall and the radial wall define a cavity.

52. The pressurized container of claim 51, wherein a portion of the initiator is seated within the cavity.

53. The pressurized container of claim 51, wherein the radial wall abuts the closure member.

54. The pressurized container of claim 45, wherein the closure member comprises a first side and a second side, and wherein the moveable member abuts the first side of the closure member and the second side of the closure member faces the chamber.

55. The pressurized container of claim 45, wherein the housing and the closure member are a single unitary member.

1 56. The pressurized container of claim 55, wherein the housing and the vessel are
2 joined by an inertia or friction weld.

1 57. The pressurized container of claim 45, wherein the vessel, the closure member,
2 and the housing are a single unitary member.

1 58. The pressurized container of claim 45, wherein the vessel comprises aluminum
2 formed by an impact process.

1 59. The pressurized container of claim 45, wherein the housing comprises aluminum
2 formed by forging.

60. A pressurized container comprising:

a hollow vessel defining a chamber therein;

a pressurized gas within the chamber, the pressurized gas comprising a mixture of helium and carbon dioxide;

a housing connected to the vessel, the housing defining an outlet;

a closure member connected to the housing and fluidly separating the outlet from the chamber of the vessel; and

an initiator connected to the housing;

wherein activation of the initiator breaks the closure member, thereby fluidly connecting the first portion of the chamber and the outlet such that the pressurized gas escapes from the chamber through the outlet.

61. The pressurized container of claim 60, further including a projectile seated within the housing and abutting the closure member, wherein activation of the initiator propels the projectile through the closure member and out of the housing, thereby fluidly connecting the first portion of the chamber and the outlet.

62. The pressurized container of claim 61, wherein the projectile breaks through the closure member before breaking the seal with the housing.

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